

Listing of Claims:

Claims 1-15. (Canceled).

16. (Currently Amended) A substrate processing apparatus comprising:

a plurality of processing tanks for processing substrates,
the plurality of processing tanks being arranged in line with
5 each other in one line;

a transporting track provided along the line of processing tanks;

a plurality of substrate transporting devices for receiving, delivering and transporting the substrates, comprising a first 10 substrate transporting device which is operable in a first operating range that extends at least from a first one of processing tank in the line of processing tanks to a last one of processing tank in the line of processing tanks, so as to include all of the processing tanks in the line, and a second substrate 15 transporting device which is operable in a second operating range that extends at least from the first one of processing tank in the line of processing tanks to the last one of processing tank in the line of processing tanks, so as to include all of the processing tanks in the line, said first substrate transporting 20 device and said second substrate transporting device being provided on the same transporting track, which extends along the

line of processing tanks, such that when the second substrate transporting device is positioned at an n^{th} one of the processing tanks the first substrate transporting device is movable only up 25 to an $n-1^{\text{th}}$ one of the processing tanks which immediately precedes the n^{th} one of the processing tanks; and

a scheduler which prepares scheduling data for controlling operations of the plurality of substrate transporting devices, based on processing conditions and transporting conditions which 30 are entered in advance;

wherein when the scheduling data indicates that transportation of the substrates occurs at more than one of the processing tanks simultaneously, the scheduler checks whether it is possible for the transportation of the substrates at said more 35 than one of the processing tanks to be shared among the plurality of substrate transporting devices; and

wherein when it is possible for the transportation of the substrates to be shared the scheduling data prepared by the scheduler is confirmed and the operations of the plurality of 40 substrate transporting devices are controlled based on the scheduling data, and when it is not possible for the transportation of the substrates to be shared a timing of loading substrates before processing at the processing tanks is changed.

17. (Previously Presented) The substrate processing apparatus according to claim 16, wherein each said substrate transporting device comprises a laterally movable portion via which the substrate transporting device is moved along the 5 transporting track, a vertically movable portion which is movable up and down in a vertical direction, and a substrate fastener, which is provided on the vertically movable portion, for holding the substrates.

18. (Previously Presented) The substrate processing apparatus according to claim 16, wherein each of the plurality of substrate transporting devices comprises a substrate fastener for holding the substrates, and the substrate processing apparatus 5 further comprises at least one fastener washing tank for washing the substrate fastener of at least one of the substrate transporting devices.

19. (Previously Presented) The substrate processing apparatus according to claim 16, wherein each of the plurality of substrate transporting devices comprises a substrate fastener for holding the substrates, and the substrate processing apparatus 5 further comprises a first fastener washing tank for washing the substrate fastener of at least the first substrate transporting device, and a second substrate fastener washing tank for washing

the substrate fastener of at least the second substrate transporting device.

20. (Currently Amended) The substrate processing apparatus according to claim ~~17~~ 19, wherein the first operating range includes the first fastener washing tank and not the second fastener washing tank, and the second operating range includes the second fastener washing tank and not the first fastener washing tank.

21. (Previously Presented) The substrate processing apparatus according to claim 16, further comprising a buffer which temporarily accommodates the substrates before the substrates are transferred to the processing tanks.

22. (Previously Presented) The substrate processing apparatus according to claim 21, wherein the first operating range includes the buffer and the first substrate transporting device is operable to transfer the substrates from the buffer to the first one of the processing tanks.

23. (Previously Presented) The substrate processing apparatus according to claim 22, wherein the second operating range does not include the buffer.

24. (Previously Presented) The substrate processing apparatus according to claim 16, further comprising a drying tank for drying the substrates after the substrates are processed in the processing tanks.

25. (Previously Presented) The substrate processing apparatus according to claim 24, further comprising a processed substrate unloading unit in which the substrates dried by the drying tank are stored.

26. (Previously Presented) The substrate processing apparatus according to claim 25, wherein the plurality of substrate transporting devices comprises a third substrate transporting device which is provided on the same transporting track as the first and second substrate transporting devices and which is operable in a third operating range that overlaps with the second operating range; and

wherein the third operating range includes the drying tank and the processed substrate unloading unit, and the third substrate transporting device is operable to transfer substrates from the drying tank to the processed substrate unloading unit.

27. (Previously Presented) The substrate processing apparatus according to claim 26, wherein each of the plurality of

substrate transporting devices comprises a substrate fastener for holding the substrates, and the substrate processing apparatus 5 further comprises:

a first fastener washing tank for washing the substrate fastener of the first substrate transporting device; and

a second substrate fastener washing tank for washing the substrate fastener of the second substrate transporting device 10 and the substrate fastener of the third substrate transporting device.

28. (Previously Presented) the substrate processing apparatus according to claim 27, wherein the first operating range includes the first fastener washing tank and not the second fastener washing tank, the second operating range includes the 5 second fastener washing tank and not the first fastener washing tank, and the third operating range includes the second fastener washing tank and not the first fastener washing tank.

29. (Previously Presented) The substrate processing apparatus according to claim 16, further comprising a shuttle for transporting unprocessed substrates which is provided above the substrate transporting devices and which is provided in parallel with the transporting track.

30. (Previously Presented) The substrate processing apparatus according to claim 29, further comprising a substrate lowering unit for receiving the unprocessed substrates from the shuttle and sending the unprocessed substrates to a delivery position for transport by the first substrate transporting device.

31. (Previously Presented) The substrate processing apparatus according to claim 29, further comprising a substrate hoisting unit for moving and transporting the unprocessed substrates upward to the shuttle.

32. (Previously Presented) The substrate processing apparatus according to claim 31, further comprising an unprocessed substrate loading unit for transporting the unprocessed substrates from a position for loading the unprocessed substrates to the substrate hoisting unit.

33. (Previously Presented) The substrate processing apparatus according to claim 16, wherein the substrates are processed along a processing route from the first one of the processing tanks to the last one of the processing tanks, and
5 wherein the substrate processing apparatus further comprises:

a processed substrate unloading unit in which the substrates are stored after processing of the substrates is completed, and which is positioned at an end side of the processing route;

10 an unprocessed substrate loading unit into which unprocessed substrates are loaded, and which is positioned at the end side of the processing route so as to be closer to the last one of the processing tanks than to the first one of the processing tanks;

15 a buffer which temporarily accommodates the substrates before the substrates are transferred to the processing tanks, and which is positioned at a beginning side of the processing route; and

20 a shuttle for transporting unprocessed substrates from the unprocessed substrate loading unit to the buffer, and which is provided above the substrate transporting devices and which is provided in parallel with the transporting track.

34. (Previously Presented) The substrate processing apparatus according to claim 33, further comprising:

5 a substrate hoisting unit which receives the unprocessed substrates from the unprocessed substrate loading unit and which moves and transports the unprocessed substrates upward to the shuttle; and

a substrate lowering unit which receives the unprocessed substrates from the shuttle and delivers the unprocessed substrates to the buffer.

35. (Previously Presented) The substrate processing apparatus according to claim 34, wherein the plurality of substrate transporting devices comprises a third substrate transporting device which is provided on the same transporting track as the first and second substrate transporting devices and which is operable in a third operating range that overlaps with the second operating range;

wherein each of the plurality of substrate transporting devices comprises a substrate fastener for holding the substrates;

wherein the substrate processing apparatus further comprises:

a first substrate fastener washing tank for washing the substrate fastener of the first substrate transporting device;

15 a second substrate fastener washing tank for washing the substrate fastener of the second substrate transporting device and the substrate fastener of the third substrate transporting device; and

20 a drying tank for drying the substrates after the substrates are processed in the processing tanks before the

processed substrates are stored in the processed substrate unloading unit;

wherein the first operating range includes the plurality of processing tanks, the first substrate fastener washing unit, and
25 the buffer;

wherein the second operating range includes the plurality of processing tanks and the second substrate fastener washing unit; and

wherein the third operating range includes the second
30 substrate fastener washing unit, the drying tank, and the processed substrate unloading unit.